

**Abstract**

A lighting arrangement for use in vision systems and imaging applications. The arrangement illuminates the object to be imaged with a supplied light of a specified illumination.

5 The intensity, hue, and directionality of the supplied light can be varied. The desired illumination is specified either by manually operable controls or via a programming interface. The arrangement has a light source which includes light-emitting diodes mounted in a housing. The source provides a constant light output over a long lifetime. A light sensor senses the total illumination on the object being imaged resulting from ambient light in addition to the supplied

10 light, and a negative feedback circuit in the arrangement can adjust the level of the supplied light in response so as to maintain a constant total illumination on the object despite variations in the ambient lighting.